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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): William D. Fisher

Serial No.: 09/771,092

Examiner: Brian R. Gordon

Filing Date: January 26, 2001

Group Art Unit: 1743

Title: FLUID DROP DISPENSING

COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria VA 22313-1450

TRANSMITTAL OF REPLY BRIEF

Sir:

Transmitted herewith is the Reply Brief with respect to the Examiner's Answer mailed on 03-28-2006. This Reply Brief is being filed pursuant to 37 CFR 1.193(b) within two months of the date of the Examiner's Answer.

(Note: Extensions of time are not allowed under 37 CFR 1.136(a))

(Note: Failure to file a Reply Brief will result in dismissal of the Appeal as to the claims made subject to an expressly stated new grounds of rejection.)

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Respectfully submitted,

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| APPELLANTS' REPLY BRIEF Address to: Mail Stop Appeal Brief-Patents Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450 | Application Number | 09/771,092 |
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| | Examiner | Brian R. Gordon |
| | Group Art | 1743 |
| | Title: | <i>Fluid Drop Dispensing</i> |

Sir:

This Reply Brief is in response to the Examiner's Answer mailed by the Office on March 28, 2006.

Please charge any required fees to Deposit Account No. 50-1078, order number 10003512-1.

REPLY BRIEF

In this Reply Brief, the Appellants address comments made in the Examiner's Answer mailed March 28, 2006, which is virtually identical to the Examiner's Answer mailed November 30, 2005. The only apparent difference between the two is in Section (8) wherein the two patents cited in the rejection are listed as evidence relied upon. The Examiner has raised no new grounds for rejection. The Appellants note that all arguments presented in the prior Appeal Brief still apply with equal force, but are not reiterated in full herein solely in the interest of brevity and for the convenience of the Board.

The rationale used by the Examiner in the rejection of Claims 1-14 and 35-42 under 35 U.S.C. § 103(a) is based on an unsupported assumption that air bubbles are present in the device of Bares *et al.* (US Patent No. 5,023,625), even though Bares *et al.* is silent with respect to bubbles. Specifically, in the Examiner's Answer the Examiner states:

The claims read in the broadest reasonable interpretation recite a fluid transfer/dispensing method. As to the particular problems, the examiner asserts the Ford reference addresses a well-known problem associated with any conventional type of dispensing, the adverse effects on dispensing which derive from the developmet [sic] of air bubbles in a dispensing system/process.

Examiner's Answer at page 6 (emphasis added).

It is noted that in making this statement, the Examiner has provided no support for the conclusion that air bubbles present in the device of Ford *et al.* would be present in any type of fluid dispensing system. As such, the Examiner's position is based on the unsupported assumption that bubbles present in the dispensing apparatus of Ford *et al.* would be present in the system of Bares *et al.* To the extent the rejection is based on an unsupported assumption, it is flawed and should be reversed.

In fact, one would not expect air bubbles to form in the device of Bares *et al.* The device of Bares *et al.* employs an ink channel region and an ink cavity region. Ink is drawn by capillary force into the ink cavity 14 and ink channel 13

from an ink feed system 18. When the piezoelectric material 22 is energized, a positive ink pressure is produced within the ink cavity 14 and ink channel, thereby creating an ink pump. Bares *et al.* at column 3, line 40 to column 3, line 7. The pumping action produces a positive pressure over and above the natural capillary force within the ink cavity and ink channel. Bares *et al.* at column 2, lines 19-22. Because of this design, there is no reason to think that air bubbles would occur in the device of Bares *et al.*

The Examiner's rejection relies impermissibly on Appellants' specification for disclosure that is absent from Bares *et al.* Furthermore, because one cannot assume that the Bares *et al.* device would produce air bubbles, it is incumbent upon the Examiner to establish that bubbles are in fact formed during operation of the ink flow control system of Bares *et al.* Absent the establishment of this fact, there would have been no motivation to modify Bares *et al.* to remove bubbles. Absent the requisite motivation to combine Bares *et al.* with Ford *et al.* (US Patent No. 6,045,759), there is no *prima facie* obviousness.

In the Response to Argument section (Examiner's Answer at page 7), the Examiner rebutted the Appellant's position by stating that the Appellant was impermissibly arguing the references individually pursuant to *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981), which the Examiner asserts to hold that "one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references." Examiner's Answer at page 7. Appellants urge that the Keller decision is inapposite and not applicable to the present facts.

Keller reiterates that the established test for combining reference teachings is "what the combined teachings of the references would have suggested to those of ordinary skill in the art." *Keller* at 642 F.2d 425 (citations omitted). In *Keller*, the Examiner had cited three references (Keller, Berkovits, and Walsh) in two combinations in a § 103 rejection of the claims. The appellant had submitted an affidavit that dealt only with what affiant thought Walsh suggested. The court viewed this affidavit as "attacking references individually" because "[t]he affidavit does not indicate that Dr. Cywinski critically reviewed the

use of digital timing in a cardiac pacer as *prima facie* established by the two combinations of references." *Keller* at 642 F.2d 426 (emphasis added).

Therefore, the decision in *Keller* does not stand for the proposition that one cannot discuss the individual teachings of each reference used in a combination rejection under § 103. Actually, the court is saying precisely the opposite i.e., one cannot discuss only the teachings of one reference to the exclusion of the others used in the rejection. The only way to determine "what the combined teachings of the references would have suggested to those of ordinary skill in the art." is to discuss the individual teachings of the references and then to discuss what the individual teachings would have suggested when combined. If elements of Appellants' claims are absent from the individual references, combining those references will not result in Appellants' invention.

Another decision, *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986) provides further insight into the holding of *Keller*. The *Merck* court cited *Keller* for the "attacking references individually" position therein. *Merck* at 800 F.2d 1097. However, the *Merck* court went on to explain that one reference "must be read, not in isolation, but for what it fairly teaches in combination with the prior art as a whole." *Id.* (emphasis added). The Appellant in *Merck* had argued that one reference in the combination rejection taught away from his invention. Therefore, it is clear that the *Keller* court meant attacking references *in isolation* when it used the phrase "attacking references individually".

Appellants have not isolated one document and omitted discussion of others, as in the cited decisions. Instead, Appellants have described all of the cited documents in their arguments that 1) the cited documents have been combined improperly, and 2) the combination of documents would not suggest each and every element of Appellants' invention. In so doing, Appellants have followed properly the *Keller* test of "what the combined teachings of the references would have suggested to those of ordinary skill in the art." As such, to the extent the Examiner's continued rejection of the claims is based on the assumption that the Appellants have attacked the references individually, the rejection should be withdrawn.

With respect to the rejection of Claims 11-14 and 39-42, all of which recite a method of fabricating arrays of chemical moieties, the Examiner has asserted that microarray fabrication with various types of dispensers is well known in the art. Answer at page 9. He has cited two patents, US Patent 6,872,359 and US Patent 6,603,118 in support of this assertion. These two patents were cited for the first time in the Examiner's Answer.

The fact remains that the statement of rejection does not include these two patents, and that the combination of documents cited in the statement of the rejection does not teach or suggest a method of fabricating arrays of chemical moieties. It is well-settled case law that documents relied upon by the Examiner, whether or not in a minor capacity, should be positively included in the statement of the rejection. *In re Hoch*, 166 USPQ 406, 407 n.3 (CCPA 1970); MPEP § 706.02(j). Accordingly, there is no *prima facie* obviousness over the cited combination of documents. As such, to the extent that the continued rejection of this group of claims is based on the teachings of US Patent 6,872,359 and US Patent 6,603,118, this rejection must be withdrawn as these patents were not included in any rejection made by the Office.

With respect to the rejection of Claim 4, the Examiner asserts:

As to Group III, claim 4, appellant admits Ford does teach tapping/striking the dispenser to dislodge air bubbles. However, appellant asserts the teaching is vague and does not suggest a direction for applying the striking. The broad teaching of Ford encompasses applying the strike in any direction and does not preclude the striking from occurring in the same or parallel direction to that of the direction of drop ejection. The direction or point of application may be dependent on how the dispenser is mounted or arranged. If a dispenser is mounted or held in a device in such a manner [in] which the sides are covered, it would be obvious to one [of] ordinary skill in the art to strike to [sic] the dispenser in such a parallel direction.

Examiner's Answer at page 8.

The Examiner's reasoning in the quoted passage is flawed. The Examiner simultaneously (1) acknowledges that the Ford *et al.* teaching is broad and (2)

applies the teaching narrowly against a particular direction, which is an element of the rejected claims because “Ford... does not preclude the striking from occurring in the same or parallel direction to that of the direction of drop ejection.” *Ibid.* This reasoning is based on impermissible hindsight, using Appellants’ specification as a guide. There is no teaching in Ford *et al.* itself that would have guided or motivated the routineer to choose a particular direction from the generic disclosure. See *In re Baird*, 16 F.3d 380, 29 USPQ 2d 1550 (Fed. Cir. 1994). The Examiner’s reasoning is not a substitute for a disclosure of a specific direction in Ford *et al.* As such, the combination of Bares *et al.* in view of Ford *et al.* would not have led the routineer to the specific elements of claim 4.

With respect to the rejection of claims 5-8, the Examiner asserts: “As to Group IV, claims 5-8, appellant argues that the combined teachings do not specify the striking occurs in a particular range of claims 5-6 and energy range of claims 7-8. The examiner asserts that the striking of the dispenser is a conventional routine.” Examiners’ Answer at page 8. Once again, the Examiner has relied on an unsupported conclusion in making a rejection. Moreover, it is unclear what the Examiner is saying. Perhaps the Examiner is confusing pounding one’s fist against a jammed vending machine with striking a pulse jet to remove air bubbles. The two are not the same, and there is no evidence that striking a pulse jet is in fact conventional. Similarly, the syringe of Ford *et al.* is not the same as the ink flow control system of Bares *et al.*

Even if the Examiner’s statement were true, there is absolutely no evidence of record that striking a pulse jet at a particular number of strikes per second or with a particular amount of energy, as in claims 5-8, is in fact conventional. Once again, the Examiner is relying on impermissible hindsight, using Appellants’ claims as a guide.

With respect to the rejection of Claims 35 and 36, the Examiner asserts: “As to Group VI, claims 35 and 36, appellant asserts that neither Ford nor Bares suggests the striking would improve pulse-jet firability. It is known that the

presence of air bubbles in certain dispensing situations may be adverse to achieving the desired effects." Examiner's Answer at page 9.

Once again, the above assertion is based on the Examiner's assumption that the bubbles in the syringe of Ford *et al.* would be present in the ink flow control system of Bares *et al.*, an assumption for which the Examiner has provided no support.

In view of the deficiencies in the documents cited in the statement of the rejection in establishing a *prima facie* case of obviousness for the claimed invention, Appellants respectfully request reversal of this rejection.

SUMMARY

The Appellants respectfully request that the rejection of claims 7-26 and 44-51 under 35 U.S.C. § 103(a) be reversed, or that the application be remanded to the Examiner with instructions to issue a Notice of Allowance.

Respectfully submitted,
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